

## AMENDMENTS TO THE CLAIMS

*What Is Claimed Is:*

1-41. Cancelled

42. (Currently Amended) A computer-based method for identifying a situation representing risk to a brokerage or its investors, comprising:

receiving, on a periodic basis, data from at least one source, wherein the received data comprises a plurality of transactions relating to securities trading and a plurality of entities involved in securities trading, wherein the plurality of transactions and the plurality of entities are not predetermined to be related;

accessing a scenario library to identify a detection algorithm for identifying a behavior of interest indicative of a risk to a brokerage or its investors;

applying the detection algorithm to identify common elements between a one or more of the plurality of the transactions and a one or more of the plurality of the entities in the received data to determine whether the common elements are collectively indicative of the behavior of interest;

determining, by a computing device, whether one or more relationships exist among the transactions and the entities that exhibit the common element; and

~~if so,~~ in response to one or more relationships existing among the transactions and the entities that exhibit the common element, generating an alert informing a user of the related transactions and entities that exhibit the common elements.

43. (Previously Presented) The method of claim 42, wherein the determining whether one or more relationships exist comprises performing one or more of the following on the plurality of transactions and the plurality of entities:

sequence matching to identify sequences in one or more transactions and to relate the identified sequences to one or more of the entities in the received data;

link analysis to establish connections between one or more transactions and entities in the received data;

rule-based analysis to identify at least one of the transactions and entities based on rules specifying parameters and thresholds;

outlier detection analysis to identify at least one of the transactions and entities outside of a defined statistical range;

decision tree analysis; and

detection processing using neural networks.

44. (Withdrawn) The method of claim 42, wherein

one or more of the plurality of transactions involve one or more customers of a securities brokerage;

the behavior of interest comprises holding concentrated positions in a single security; and

the received data comprises market value of a concentrated position and total cash and security value.

45. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more customers of a securities  
brokerage;  
the behavior of interest comprises holding a concentrated position in low-priced  
securities; and  
the received data comprises low-priced equities balance and total cash and security value.

46. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more customers of a securities  
brokerage;  
the behavior of interest comprises abusing auto-execution systems; and  
the received data comprises information associated with a plurality of orders.

47. (Withdrawn) The method of claim 46, further comprising generating an alert if one or  
more of the following conditions are met:

each order is on a same side of a market;  
a total time span between orders is less than a threshold;  
a quantity of each order is less than an auto-execution threshold;  
a total quantity of orders exceeds the auto-execution threshold;  
a plurality of the orders originate from a same account;  
a plurality of the orders originate from a plurality of accounts associated with a same  
household; and  
the orders are entered during regular trading hours.

48. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more customers of a securities  
brokerage;  
the behavior of interest comprises marking the close; and  
the received data comprises order time, holdings by others in a household and margin  
maintenance percentage.

49. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more customers of a securities  
brokerage;  
the behavior of interest comprises making improper short sales; and  
the received data comprises securities sold by an account holder, securities held long by  
an account holder and securities purchased by an account holder.

50. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more customers of a securities  
brokerage;  
the behavior of interest comprises making cross-trades away from the market; and  
the received data comprises information associated with a plurality of executions.

51. (Withdrawn) The method of claim 50, further comprising generating an alert if a  
plurality of executions:

- occur during extended trading hours;
- involve a same security;
- have a same execution price;
- have a same execution date and time;
- are on opposite sides of a market.

52. (Withdrawn) The method of claim 42, wherein

- one or more of the plurality of transactions involve one or more customers of a securities brokerage;
- the behavior of interest comprises encouraging orders by marking them as unsolicited;

and

- the received data comprises a number of unsolicited orders and a number of solicited orders.

53. (Withdrawn) The method of claim 42, wherein

- one or more of the plurality of transactions involve one or more customers of a securities brokerage;
- the behavior of interest comprises encouraging short-term holding; and
- the received data comprises buy orders, sell orders and indication of solicitation.

54. (Withdrawn) The method of claim 42, wherein

- one or more of the plurality of transactions involve one or more securities representatives;

the behavior of interest comprises soliciting orders but marking them as unsolicited; and  
the received data comprises solicitation attempts and unsolicited orders.

55. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more securities  
representatives;

the behavior of interest comprises shadowing a customer's account; and  
the received data comprises time between trades in a security.

56. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more brokerage order-takers or  
employees;

the behavior of interest comprises front-running; and  
the received data comprises employee account activity and employee-linked account  
activity.

57. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more brokerage employees;  
the behavior of interest comprises trading on insider information; and  
the received data comprises closing prices and trades in an account associated with an  
employee.

58. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more brokerage employees;  
the behavior of interest comprises making large deposits; and  
the received data comprises employee deposit amounts and employee account net worth.
59. (Currently Amended) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more customers of a securities  
brokerage and securities representatives;  
the behavior of interest comprises rapid switching of one mutual fund[[s]] for another  
mutual fund; and  
the received data comprises fund purchase date, mutual fund sale date and solicitation  
records.
60. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve one or more investment advisors;  
the behavior of interest comprises disproportionate allocation of IPO shares; and  
the received data comprises IPO initial trading price, IPO closing price and subaccount  
IPO allocation.
61. (Withdrawn) The method of claim 42, wherein  
one or more of the plurality of transactions involve an investment advisors;  
the behavior of interest comprises unfair allocation of block trades to subaccounts of the  
investment advisor; and

the received data comprises block trade purchase price, block trade allocation and security price at time of allocation.

62. (Withdrawn) The method of claim 42, wherein
- one or more of the plurality of transactions involve an investment advisor;
- the behavior of interest comprises maintenance of concentrated positions in a subaccount of the investment advisor; and
- the received data comprises a value of individual equities within the subaccount, a value of the subaccount and a total number of subaccounts managed by the advisor.

63. (Previously Presented) The method of claim 42, further comprising:
- prioritizing the one or more relationships, wherein the prioritizing is based on user defined logic and values; and
- generating one or more alerts based on one or more of the prioritized relationships.

64. (Previously Presented) The method of claim 42, wherein
- determining whether one or more relationships exist comprises prioritizing the determined relationships; and
- generating an alert comprises generation an alert only if a relationship having a predetermined priority is identified.



65. (Previously Presented) The method of claim 42, further comprising:  
identifying any accounts associated with the determined transactions and entities that  
meet a set of user-defined criteria;  
generating an alert informing the user of the identified accounts.
66. (Previously Presented) The method of claim 42, further comprising:  
identifying one or more accounts that meet a set of user-defined criteria for a current  
month but that did not meet the set of user-defined criteria for a previous month, wherein the  
accounts are associated with the determined transactions and entities;  
generating an alert comprising the identified accounts.
67. (Previously Presented) The method of claim 42, further comprising:  
identifying a household, having a plurality of associated accounts,  
wherein the household meets a set of user-defined criteria,  
wherein the household is associated with one or more of the determined transactions and  
entities;  
wherein none of the associated accounts individually meet the set of user-defined criteria;  
and  
generating an alert comprising the identified household.
68. (Previously Presented) The method of claim 42, further comprising:  
identifying a first set of households, wherein each household is associated with one or  
more accounts, wherein each household meets a set of user-defined criteria, wherein none of the

accounts associated with the household individually meet the set of user-defined criteria, wherein each household in the first set is associated with one or more of the determined transactions and entities; and

identifying from the first set of households, a second set of households comprising households that did not meet the set of user-defined criteria in a previous month.

69. (Previously Presented) The method of claim 42, wherein generating an alert comprises:

providing one or more alert visualizations associated with the transactions and the entities that exhibit the common elements to a user.

70. (Currently Amended) The method of claim 42, further comprising:

assigning a score to the determined relationships;

determining an alert value associated with the alert based on the assigned score; and

~~if in response~~ to the alert value ~~is being~~ below a threshold value, automatically closing the alert.

71. (Currently Amended) A computer program embodied on a computer readable medium for identifying a situation representing risk to a brokerage or its investors, wherein the program comprises one or more sequences of instructions that cause one or more processors to perform the steps of:

receiving data from at least one source, wherein the received data comprises a plurality of transactions relating to securities trading and a plurality of entities involved in securities trading,

wherein the plurality of transactions and the plurality of entities are not predetermined to be related;

accessing a scenario library to identify a detection algorithm for identifying a behavior of interest indicative of a risk to a brokerage or its investors;

applying the detection algorithm to identify common elements between a plurality of the transactions and a plurality of the entities in the received data to determine whether the common elements are collectively indicative of the behavior of interest;

determining whether one or more relationships exist among the transactions and the entities that exhibit the common element; and

~~if so,~~ in response to one or more relationships existing among the transactions and the entities that exhibit the common element, generating an alert informing a user of the related transactions and entities that exhibit the common elements.

72. (Previously Presented) The computer program of claim 71, wherein the instructions further cause the one or more processors to perform one or more of the following on the plurality of transactions and the plurality of entities:

sequence matching to identify sequences in one or more transactions and to relate the identified sequences to one or more of the entities in the received data;

link analysis to establish connections between one or more transactions and entities in the received data;

rule-based analysis to identify at least one of the transactions and entities based on rules specifying parameters and thresholds;

outlier detection analysis to identify at least one of the transactions and entities outside of a defined statistical range;

decision tree analysis; and

detection processing using neural networks.

73. (New) The method of claim 42, wherein applying the detection algorithm to identify common elements comprises determining whether the common elements are collectively indicative of a behavior that conflicts with one or more Securities Exchange Commission regulations.

74. (New) The method of claim 42, wherein applying the detection algorithm to identify common elements comprises determining whether the common elements are collectively indicative of a behavior that conflicts with one or more National Association of Securities Dealers regulations.

75. (New) The method of claim 42, wherein applying the detection algorithm to identify common elements comprises determining whether the common elements are collectively indicative of an illegal financial activity.

76. (New) The method of claim 42, wherein applying the detection algorithm to identify common elements comprises determining whether the common elements are collectively indicative of a fraudulent financial activity.

77. (New) The method of claim 42, wherein: accessing a scenario library to identify a detection algorithm for identifying a behavior of interest indicative of a risk to a brokerage or its investors comprises identifying rapid switching of a first mutual fund for a second mutual fund, wherein one or more of the plurality of transactions is a solicited transaction involving one or more customers of a securities brokerage and one or more securities representatives, wherein the solicited transaction is solicited by the securities representative, wherein proceeds associated with the switching are at least a percentage of a value of the first mutual fund.

78. (New) The method of claim 42, wherein:

the behavior of interest comprises:

selling, by a customer of a securities brokerage, a first mutual fund within six months of purchasing the first mutual fund, and

using proceeds from the selling to buy a second mutual fund; and

one or more of the following is solicited by a securities representative:

sale of the first mutual fund, and

purchase of the second mutual fund.

79. (New) The method of claim 42, wherein generating an alert comprises generating an alert in response to the following:

selling, by a customer of a securities brokerage, a first mutual fund wherein proceeds from selling are used to purchase a second mutual fund, wherein one or more of the selling and the purchase are solicited by a securities representative;

proceeds from selling the first mutual fund are at least \$10,000;

a purchase price of the second mutual fund is at least \$10,000; and  
the proceeds from selling the first mutual fund are at least a percentage of a value of the  
first mutual fund.